

We claim:

1. A process for the continuous preparation of concentrated hydrogen peroxide of concentration c_p from aqueous hydrogen peroxide of concentration c_E , c_E being at least 80 wt.% and c_p being greater than c_E , comprising:

suspension crystallizing aqueous hydrogen peroxide of concentration c_E to obtain hydrogen peroxide crystals and after-treating of the hydrogen peroxide crystals contained in the suspension,

wherein the after-treating takes the form of countercurrent washing in a hydraulic or mechanical washing column with a packed crystal bed, and washing said hydrogen peroxide crystals with molten hydrogen peroxide of concentration c_p as the washing medium.

2. The process according to claim 1, further comprising concentrating aqueous hydrogen peroxide of concentration c_E in the range from 85 to 95 wt.%, in one step to a concentration c_p of over 98 wt.%.

3. The process according to claim 1, further comprising concentrating aqueous hydrogen peroxide of concentration c_E in the range from 88 to 92 wt.%, in one step to a concentration c_p of equal to or greater than 99.9 wt.%.

4. The process according to claim 1, wherein the suspension crystallizing is carried out in a single- or multi-stage scraper-type crystallizer.

5. The process according to claim 2, wherein the suspension crystallizing is carried out in a single- or multi-stage scraper-type crystallizer.

6. The process according to claim 3, wherein the suspension crystallizing is carried out in a single- or multi-stage scraper-type crystallizer.
- 5 7. The process according to claim 1, further comprising wherein the suspension crystallizing is carried out in a scraper-type crystallizer, the countercurrent washing of the crystals, combined with solid-liquid separation of the suspension, is carried out in a mechanical washing column, and a portion of the mother liquor that leaves the washing column is fed back into the scraper-type crystallizer.
- 10 8. The process according to claim 2, further comprising wherein the suspension crystallizing is carried out in a scraper-type crystallizer, the countercurrent washing of the crystals, combined with solid-liquid separation of the suspension, is carried out in a mechanical washing column, and a portion of the mother liquor that leaves the washing column is fed back into the scraper-type crystallizer.
- 15 9. The process according to claim 3, further comprising wherein the suspension crystallizing is carried out in a scraper-type crystallizer, the countercurrent washing of the crystals, combined with solid-liquid separation of the suspension, is carried out in a mechanical washing column, and a portion of the mother liquor that leaves the washing column is fed back into the scraper-type crystallizer.
- 20 10. The process according to claim 4, further comprising wherein the suspension crystallizing is carried out in a scraper-type crystallizer, the countercurrent washing of the crystals, combined with solid-liquid separation of the suspension, is carried out in a mechanical washing column, and a portion of the mother liquor that leaves the washing column is fed back into the scraper-type crystallizer.
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mother liquor that leaves the washing column is fed back into the scraper-type crystallizer.

- 5 11. The process according to claim 5, further comprising wherein the suspension crystallizing is carried out in a scraper-type crystallizer, the countercurrent washing of the crystals, combined with solid-liquid separation of the suspension, is carried out in a mechanical washing column, and a portion of the mother liquor that leaves the washing column is fed back into the scraper-type crystallizer.
- 10 12. The process according to claim 4, further comprising nucleation in the suspension crystallizing is carried out at a temperature in the range from greater than 0 to 5 K, below the equilibrium temperature of the H_2O_2 starting material, and the temperature is then lowered further until a suspension density in the range from 5 to 80 % is achieved.
- 15 13. The process according to claim 4, further comprising nucleation in the suspension crystallizing is carried out at a temperature in the range from greater than 0.5 to 3 K, below the equilibrium temperature of the H_2O_2 starting material, and the temperature is then lowered further until a suspension density in the range from 5 to 80 % is achieved.
- 20 25 14. The process according to claim 7, further comprising nucleation in the suspension crystallizing is carried out at a temperature in the range from greater than 0 to 5 K, below the equilibrium temperature of the H_2O_2 starting material, and the temperature is then lowered further until a suspension density in the range from 5 to 80 % is achieved.
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15. The process according to claim 1, wherein the suspension crystallization is carried out to a suspension density in the range from 20 to 50 %.
- 5 16. The process according to claim 1, wherein the suspension crystallization is carried out to a suspension density in the range from 20 to 30 %.
17. The process according to claim 1, further comprising hydrogen peroxide having a concentration c_p of at
10 least 98 wt.%, that leaves the washing column in the form of a melt is stabilized with an effective amount of one or more stabilizers.
18. The process according to claim 1, further comprising hydrogen peroxide having a concentration c_p of at
15 least 99 wt.%, that leaves the washing column in the form of a melt is stabilized with an effective amount of one or more stabilizers.
19. The process according to claim 1, further comprising hydrogen peroxide having a concentration c_p of at
20 least 99 wt.%, that leaves the washing column in the form of a melt is stabilizing with a stabilizer from the group of tin compounds, phosphates, di- and tri-phosphates, phosphonates and radical acceptors.
20. Hydrogen peroxide having a concentration of from
25 99.9 to 100 wt.% and a content of TOC, nitrate, phosphate, nickel and tin of in each case less than 4 mg/l, preferably less than 1 mg of Ni/l, less than 1 mg of Sn/l and less than 2 mg of phosphate/l.
21. Use of the hydrogen peroxide according to claim 20
30 as an oxidising agent for motors or for the treatment of electronic components.